



# Which Accounts Are Worth Saving?

The Fruitful Marriage of Attrition Propensity and Profitability Models

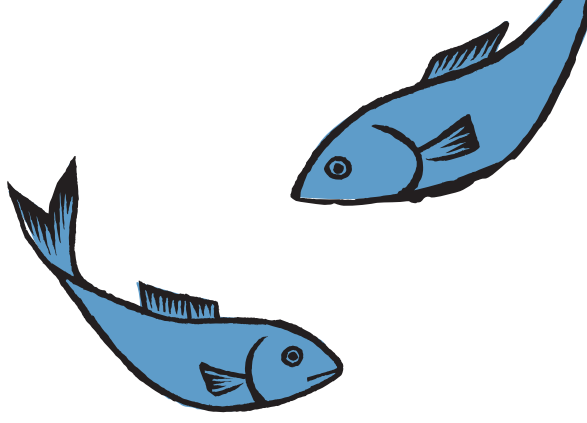
By William M. Saubert

**N**ot so long ago, Frederick Reichheld posed a new framework for thinking about retaining customers in his book, *The Loyalty Effect* (1996). At the time, he and many other experts declared “loyalty is dead,” and companies worried there was no way to keep “fickle customers.” In the intervening years, much thought and effort has been expended on Customer Relationship Management tools and systems. But as Reichheld himself would maintain, the solution to stemming defections is not found in CRM systems, but in delivering value to your customers.

The flip side is also true. When banks devise customer retention strategies, they should weigh the value earned from each customer. They need to answer important questions such

as, “How much should we invest in a customer who is not likely to leave, or who is not currently profitable?” and “How much should we invest in a customer who is not currently profitable, but *could* be in the future?” These questions are often overlooked as banks strive to increase customer loyalty and reduce attrition. (For more about how banks should measure loyalty, see “Beyond Cardholder Satisfaction” in Issue 1, 2008 of *The Advisor*.)

In 2005, a large Australian bank believed that the answers to these questions could help stem the flight of customers from its credit card portfolio. This hunch turned out to be correct, and the process the bank went through to derive these answers provides valuable lessons for all issuers.



### A SHORT HISTORY: DEREGULATION HEIGHTENS COMPETITION AND TRIGGERS DEFECTIONS

Until the early 1980s, banking in Australia was dominated by state-owned institutions that had little incentive to compete with one another. Rates and terms on most deposit or borrowing products were remarkably similar and there was little product differentiation or customer service innovation. The “big four” banks—Australia New Zealand Bank, Commonwealth Bank, National Australia Bank, and Westpac—were further protected from competitive pressures by a long-standing government policy against mergers. However, deregulation in the mid-1980s, which resulted in the public listing of these companies and entry by new foreign competitors, changed the game.

Beginning in 2003 and 2004, one of the four large Australian banks noticed that its credit card portfolio was losing customers at an alarmingly high rate. Profitability was also deteriorating. An internal review discovered some gaps in the bank’s offerings, but that alone could not explain the difference in cardholder attrition. The bank also found that in the months immediately following the loss of a credit card relationship, many of these customers moved other banking products and services to rival institutions.

Concerned by this worrisome trend, the bank engaged MasterCard Advisors to help it identify customers most likely to close their credit card accounts so that preventive action could be taken.

### SCORECARD ACCURATELY PREDICTS THOSE MOST LIKELY TO DEFECT

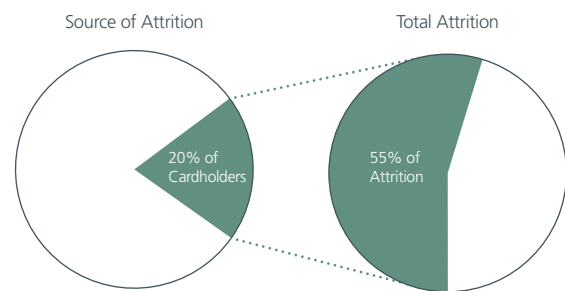
Credit cards generate a vast amount of cardholder transaction data, but for the purposes of analyzing voluntary attrition, it turns out that other kinds of information are equally important. The first step in Advisors’ engagement was to develop a hypothesis about which factors among five broad categories of cardholder data were having the greatest impact on cardholder attrition:

- Demographics
- Overall spending and balance growth or reduction
- Recent payment patterns

- Annual fee amount and timing
- Reward accumulation and redemption behavior

At the outset of the analysis, over 50 variables from those five categories were considered, each assessed for its impact on voluntary attrition. As is typical, some variables, such as age, postal code, or current credit line, remained relatively static and provided little insight. Others, such as contraction in the breadth of spending categories or the velocity at which those categories declined, continually changed. Once we identified those variables having the greatest impact on attrition, we devised an initial attrition propensity model. This model identified those customers most at risk. In fact, as Figure 1 shows, the model predicted that the 20 percent of cardholders most likely to close their accounts would generate 55 percent of account attrition.

**FIGURE 1**  
Initial Attrition Model Finds that 20% of Cardholders Account for More Than Half of All Attrition



Source: MasterCard Advisors

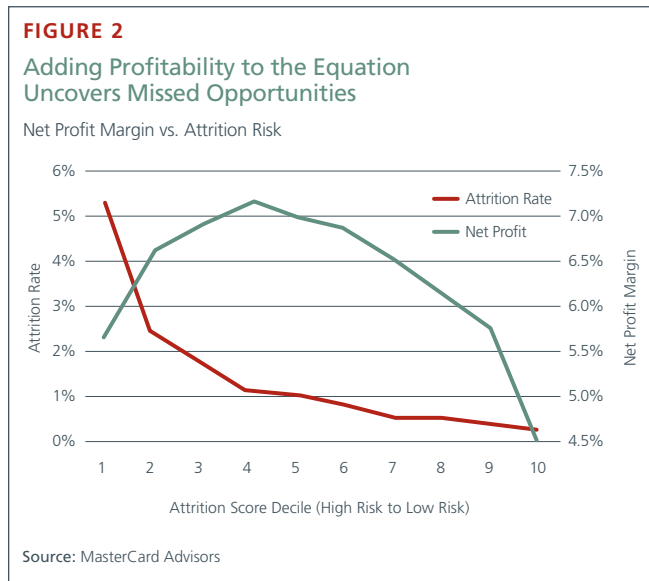
Seeing these results, the client’s cards management team was prepared to focus massive, across-the-board retention programs on the top two deciles immediately. In their view, the first question posed—which cardholders are likely to close their accounts—had been answered, and the remaining eight deciles could be considered relatively “safe.” While Advisors analysts agreed that the bottom eight deciles demonstrated a statistically lower propensity toward attrition, this data did not answer the important question: Which accounts would be profitable for the bank to spend money to retain?

*How much should a bank invest in a customer who is not likely to leave, or who is not currently profitable? How much should a bank invest in a customer who is not currently profitable, but could be in the future?*

**PINPOINTING THE PROFITABLE CUSTOMER**

MasterCard Advisors then constructed a customer profitability model for the client, based on inputs for both cost and revenue. On the revenue side, Advisors considered net interest income, annual fees, exception fees for late payments and over-limit situations, and interchange. Costs included an allocation for account service and maintenance, as well as the cost of rewards for those accounts with products that offered them. In addition, a charge for actual and prospective losses was reflected in certain accounts, if warranted.

Now the team had two interrelated data plots at the individual customer level that could be included on the same chart—attrition propensity (red line) and account profitability as defined by net profit margin (green line). The results are presented in Figure 2.



**THE DEVIL IS IN THE DATA**

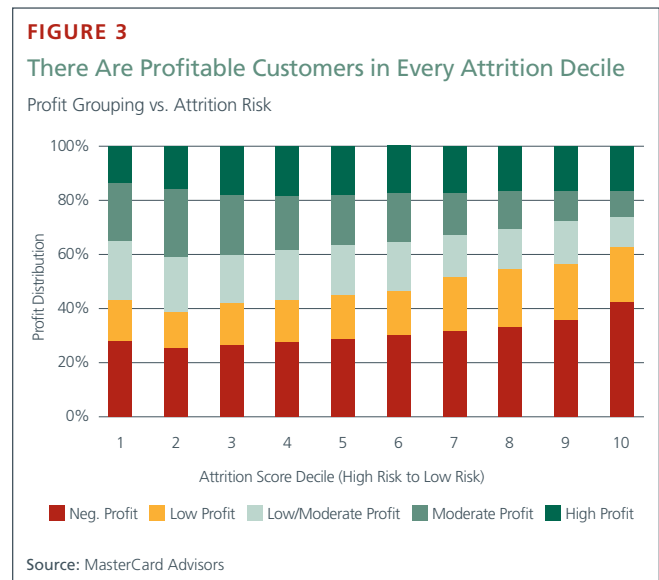
It was now clear which customers were both profitable and had a high propensity for voluntary attrition. The bank was prepared to focus its retention programs on the customers who fell squarely in the large and profitable middle section of the portfolio—the 60 percent of customers in attrition score

deciles 3 through 8. The two ends of the attrition propensity distribution would, the bank decided, receive little if any retention effort.

However, the Advisors team cautioned against this conclusion, as it, too, might result in missed opportunities. Advisors’ analysts felt that there were probably some profitable customers worth saving in the second and ninth attrition deciles—cardholders who otherwise would slowly but steadily drift toward the dreaded first or tenth deciles and eventually either close their accounts or become highly unprofitable.

So our analysts developed another view of the issuer’s portfolio—clearly showing the profit contribution of customers in each decile, from “Negative Profit” on the low end (meaning unprofitable customers who would actually benefit the bank if they were to leave) to “High Profit” on the other. The results of this analysis are presented in Figure 3.

Closer analysis revealed that there were profitable customers in every attrition decile. For example, among the first decile—the group of cardholders with the greatest risk of attrition—more than one third (35 percent) of customers were moderately or highly profitable. Likewise, in the tenth decile—those





least likely to attrite—approximately 30 percent were either moderately or highly profitable. Simply giving up on these customers at the extremes of the attrition distribution scale could lead to a significant loss of customers and, more importantly, profit.

A few important insights were beginning to emerge. For instance, certain cardholders were identified as being not only unprofitable but entrenched in their unprofitable behaviors. Clearly, the bank should not expend its energy trying to prevent them from taking their unprofitable behaviors elsewhere. Conversely, there were highly profitable customers in the middle attrition deciles who, we believed, should be made to feel appreciated for their loyalty.

Finally, we wanted our model to reflect the fact that customer behaviors change over time. For example, many of the unprofitable customers in the first attrition decile were verging on becoming highly creditworthy, as rising incomes and increasing cardholder spend would make them prized customers over the next five to ten years. At the other end of the attrition scale, many customers who did not *currently* carry balances had, in the not too distant past, carried medium to large balances. Advisors concluded that successful retention initiatives must reflect the dynamic nature of cardholder behavior over time.

**MAXIMIZING FUTURE PROFITABILITY**

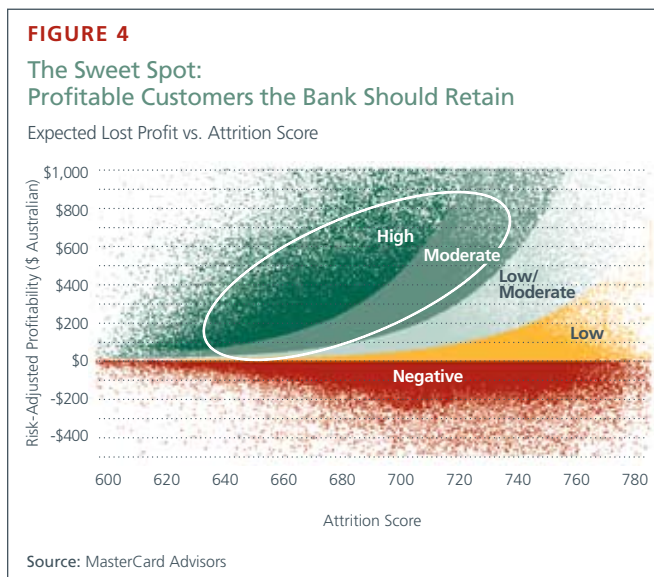
The task now before the analytics team was to devise a way to achieve two objectives simultaneously: minimize the risk of future attrition and maximize future profitability. Having built a model that reliably predicted attrition risk, the team focused on developing a measure of estimated potential profitability.

They used the net margin contribution model developed earlier in the engagement as the foundation. Onto this they added the evolutionary profitability paths of customers in key demographic groups over time. In other words, some

customers who were initially unprofitable migrated to high profit over time; others began as highly profitable and drifted into negative profitability. Of course, many started and stayed moderately profitable or unprofitable, changing little in behavior over time. Finally, our analysts added a measure to reflect potential credit quality deterioration and associated losses over time. What resulted was a robust estimate of risk-adjusted potential profitability.

In the end, *probability* of attrition was understood to be a more precise measure of the impact attrition would have on the issuer’s revenue. To make the scores more user-friendly, probability of attrition was expressed in numbers resembling the bank’s initial credit application and cardholder behavior scores (from 600 on the low end, meaning a higher likelihood of attrition, to 780 on the high end, for those with the lowest attrition risk).

Advisors sought to capture just how much profit the bank might potentially lose from each customer. Probability of attrition was multiplied by risk-adjusted estimated potential profitability (see Figure 4) arrayed in five bands ranging from high potential lost profit to negative lost profit (those customers currently unprofitable, which the bank would actually benefit by losing).



*Certain cardholders were identified as being not only unprofitable but entrenched in their unprofitable behaviors. It was clear that the bank should not expend its energy trying to prevent them from taking their unprofitable behaviors elsewhere.*

Each point on the graph represents an individual cardholder along two dimensions: (1) an attrition propensity score ranging from 600 (high risk) to 780 (low risk), and (2) the lost profits the bank would suffer over three years, ranging from -\$500 to +\$1,000. Customers with high expected lost profit scores were considered important customers to retain (the green points on the graph). Alternatively, a negative lost profit score (red points) meant that the bank was most likely to lose money from these customers. The ellipse drawn on the graph represents the “sweet spot” for the bank’s retention efforts—customers with attrition scores between 630 and 740 and expected lost profits between \$50 and \$900—or nearly 70 percent of the bank’s potential profits from its card business.

The bank could now readily identify its most valuable customers—those cardholders contributing the greatest profit—and actively work to retain them. The issuer did so by expressing its appreciation across a range of well defined and differently priced alternatives. Customer service representatives (CSRs) were given a set of offers to entice customers to maintain their accounts. The cost of each incentive would be more than repaid by the profits gained by keeping the cardholder. For example, a customer with an attrition score of 670 and an expected lost profit of \$610 might initially be offered a one-year annual fee waiver valued at a cost of \$80 to the bank. A customer with the same attrition score but an expected lost profit value of \$820, on the other hand, might be offered discounts on tickets to concerts or other special events—at a cost of about \$150.

A more valuable customer might be offered a 150 basis-point reduction in the interest rate on the account, at a cost of \$310 to the bank over three years. On the other end of the spectrum, a customer with a low attrition risk (a score of 750, say) and an expected lost profit of only \$100 might receive a restatement of the benefits associated with having the card, and no financial offer at all.

**THE RIGHT MODELS LEAD TO THE RIGHT CUSTOMERS**

With better insight into how likely a customer is to leave, coupled with the financial impact of that loss, this leading Australian issuer was able to make more intelligent decisions about how much to invest in retaining customer relationships. The results have been significant: since full implementation, voluntary attrition across all products has been reduced by 22 percent—while it accelerated at other major Australian banks—putting our client significantly below the market average. Our client’s success at increasing profitability at a faster rate than its peers demonstrates the power of harnessing data, analytics, and propensity models to more accurately gauge the return on investment from retention efforts.

The competitive environment in Australia during this period was very similar to what an issuer would now find in almost any market in the world. In the current, very challenging economic climate, knowing where to place your bets is more important than ever. ●



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